Course: Introduction to Quantum Mechanics I, PHYS 311
Term: Fall 2017
Room: TBD
Class: MWF, 9:00-9:50 am

DRAFT SYLLABUS. SUBJECT TO CHANGE

INSTRUCTOR CONTACT INFORMATION

Instructor: Tom Killian
Office: Brockman Hall 336
Email: killian@rice.edu
Office Hours: Thursday 2:30-3:30 pm and by appointment

Grader: TBD

COURSE OBJECTIVES AND LEARNING OUTCOMES

The course objective is to familiarize students with introductory quantum mechanics, including quantum state vectors and the basic postulates of quantum mechanics, rotation of basis states, angular momentum, time evolution in quantum mechanics, spin-1/2 systems, wave mechanics in 1D, the 1D harmonic oscillator, and wave mechanics in 3D.

The learning objectives are that students will understand the concepts listed above at the level covered in the textbook for the course. They will be able to apply these concepts to calculate state vectors and energy levels for simple quantum systems, determine expectation values and the results of measurements, and describe the time-dependence of spin-1/2 systems.

REQUIRED TEXTS AND MATERIALS

The textbook for Phys 311 will be A Modern Approach to Quantum Mechanics (2nd edition), J. S. Townsend, University Science Books. It will be available in the bookstore. This is an excellent textbook that is well worth having on your shelf.

EXAMS AND ASSIGNMENTS

I will assign one homework set each week, usually due in class at the beginning of class one week later. Homework sets will be available from the course web page.

There will be one midterm exam and one final exam.

GRADE POLICIES

Homework Policy: Homework must be done under the Honor System. You are encouraged to discuss the homework problems with your PHYS 311 classmates and with the instructor, but you must write up your solutions *independently*. Of course, you must not copy from anyone else's solutions. The homework papers you hand in should be the result of your own thought and effort. You are not allowed to consult solution sets for course assignments from previous years or solutions that may be available from other parties such as on the internet. The exception to this is that you may consult any sources when studying for the mid-term and the final exam, but not when working on your homework assignments.

Late Policy: Late homework will be marked down 20% for each day late, unless excused by illness or some other valid reason. Late homework must be delivered to the instructor and the student must write "Late" and the date and time on the front page.

Grading Weights: Homework: 30%
Midterm Exam: 30%
Final Exam: 40%

COURSE WEBPAGE: CANVAS.RICE.EDU

RICE HONOR CODE

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

Problems sets and exams in this class are covered by the honor code. You are encouraged to work together and discuss subjects in the course, but you must write up your own problem sets and your own lab reports. You should never copy the work of another student. You may not look at solution sets from previous years or solution sets found on the internet. The exception to this is that you may consult any sources when studying for the mid-term and the final exam, but not when working on your homework assignments.

DISABILITY SUPPORT SERVICES

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

SYLLABUS CHANGE POLICY

This syllabus is only a guide for the course and is subject to change with advanced notice.